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**Working Party on the Transport of Dangerous Goods**

**Joint Meeting of the RID Safety Committee and the  
Working Party on the Transport of Dangerous Goods  
(Bonn, 13-17 October 2003)**

**Amendments to TRANS/WP.15/AC.1/2003/20**

4.1.1.19.1 Scope

For high and medium molecular mass polyethylene packagings as specified in 6.1.5.2.6 and for high molecular mass polyethylene IBCs as specified in 6.5.4.3.5 the chemical compatibility with filling substances may be verified ~~without further testing~~ by assimilation to standard liquids following the procedures as set out in 4.1.1.19.3 to 4.1.1.19.5 and using the list in 4.1.1.19.6, provided that the particular design types have been tested with these standard liquids in accordance with 6.1.5 or 6.5.4 taking into account 6.1.6 and that the conditions in 4.1.1.19.2 are met. When assimilation in accordance with this sub-section is not possible, the chemical compatibility needs to be ~~proved in another way. This shall be done~~ verified by design type testing in accordance with 6.1.5.2.5 or by laboratory tests in accordance with ~~6.1.5.2.5 or~~ 6.1.5.2.7 for packagings, and in accordance with 6.5.4.3.3 or 6.5.4.3.6 for IBCs, respectively.

*[Note: Independent from the provisions of this sub-section the use of packagings and IBCs for a specific filling substance is subject to the limitations of chapter 3.2, Table A and the packing instructions in chapter 4.1.]*

4.1.1.19.2 Conditions

The relative densities of the filling substances shall not exceed that used to determine the height for the drop test performed successfully according to 6.1.5.3.4 or 6.5.4.1.3 and the mass for the stacking test performed successfully according to 6.1.5.6 or where necessary according to 6.5.4.6 with the assimilated standard liquid(s). The vapour pressures of the filling substances at 50 °C or 55 °C shall not exceed that used to determine the pressure for the internal pressure (hydraulic) test performed

successfully according to 6.1.5.5.4 or 6.5.4.8.4.2 with the assimilated standard liquid(s). In case that filling substances are assimilated to a combination of standard liquids, the minimum values derived from the applied drop heights, stacking masses and internal test pressures of all of those standard liquids shall be considered comparing these values with the corresponding values the filling substances.

**[Example:** UN 1736 Benzoyl chloride is assimilated to the combination of standard liquids “Mixture of hydrocarbons and wetting solution”. Benzoyl chloride has a vapour pressure of 0.34 kPa at 50 °C and a density of approximately 1.2 kg/litres. Design type tests for plastics drums and jerricans were frequently performed at minimum required test levels. In practice this means that the stacking test is commonly performed with stacking loads considering only a density of 1.0 for the “Mixture of hydrocarbons” and a density of 1.2 for the “Wetting solution” (see definition of standard liquids in 6.1.6). As a consequence chemical compatibility of such tested design types would not be proved for benzoyl chloride by reason of the inadequate test level of the design type with the standard liquid “mixture of hydrocarbons”. (Due to the fact that in the majority of cases the applied internal hydraulic test pressure is not less than 100 kPa, the vapour pressure of benzoyl chloride would be covered by such test level according to 4.1.1.10.]

**All components of a filling substance, which may be a solution, mixture or preparation, such as wetting agents in detergents and disinfectants, irrespective whether dangerous or non-dangerous, shall be included in the assimilation procedure.**

#### 4.1.1.19.3 Assimilation procedure

The following steps shall be taken to assign filling substances to listed substances or groups of substances in 4.1.1.19.6 (see also scheme in **Figure 4.1.1.19-1**).

- (a) Classify the filling substance in accordance with the procedures and criteria of Part 2 (determination of the UN number and packing group).
- (b) If it is included there, Go to the UN number in column 1 of the assimilation list in 4.1.1.19.6.
- (c) Select the line that ~~most~~ corresponds ~~to this UN number~~ in terms of packing group, concentration, flashpoint, the presence of non-dangerous components etc. by means of the information given in columns 2, 3 and 6, if there is more than one entry for this UN number.
- (d) If this is not possible, the chemical compatibility shall be verified in accordance with 6.1.5.2.5 or 6.1.5.2.7 for packagings and in accordance with 6.5.4.3.3 or 6.5.4.3.6 for IBCs (however, in the case of aqueous solutions, see 4.1.1.19.4).~~If there is no line under this UN number and packing group where the substance or group of substances is mentioned by~~

~~name, the correct line of the corresponding single entry or collective entry may be selected, if available.~~

~~[Example: 3-Methyl-1-heptene is not indicated as a specific isomer mentioned by name among the entries of UN Number 1216 in the assimilation list. In such case the line with the name Isooctene may be selected, if the properties of the isomer are in accordance with the criteria of class 3: classification code F1 and packing group II even if the entry "isomeric mixture" is indicated in cell of the column "Description".]~~

- (e) If the UN number and packing group of the filling substance determined in accordance with (a) is not included in the assimilation list or if the filling substance cannot be assigned to a single entry or collective entry in accordance with (d), the chemical compatibility shall be proved in accordance with 6.1.5.2.5, 6.1.5.2.6 or 6.1.5.2.7 for packagings and in accordance with 6.5.4.3.2, 6.5.4.3.3, 6.5.4.3.4, 6.5.4.3.6 or 6.5.4.3.7 for IBCs"
- (f) Apply the "Rule for collective entries" [as described in 4.1.1.19.5](#) if this is indicated in column 7 of the selected line ~~as described in 4.1.1.19.5~~.
- (g) The chemical compatibility of the [filling](#) substance ~~mentioned by name~~ may be regarded as ~~proven~~[verified](#) taking into account 4.1.1.19.1 and 4.1.1.19.2, if a standard liquid or a combination of standard liquids is assimilated in column 7: [and the design type is approved for that/those standard liquid\(s\)](#).

#### 4.1.1.19.4 Aqueous solutions

Aqueous solutions of substances and groups of substances assimilated to specific standard liquid(s) in accordance with 4.1.1.19.3 may also be assimilated to that/those standard liquid(s) provided the following conditions are met:

- the aqueous solution can be assigned to the same UN number as the listed substance in accordance with the criteria of 2.1.3.3, and
- the aqueous solution is not specifically mentioned by name otherwise in the assimilation list in 4.1.1.19.6, and
- no chemical reaction is taking place between the dangerous substance and the solvent water.

*[Example: Aqueous solutions of UN 1120 tert-Butanol:*

- *Pure tert-Butanol itself is assigned to the standard liquid acetic acid in the assimilation list.*
- *Aqueous solutions of tert-Butanol can be classified under the entry UN 1120 BUTANOLS in accordance with 2.1.3.3, because the aqueous solution of tert-*

*Butanol does not differ from the entries of the pure substances relating to the class, the packing group(s) and the physical state. Furthermore, the entry "1120 BUTANOLS" is not explicitly limited to the pure substances, and aqueous solutions of these substances are not specifically mentioned by name otherwise in chapter 3.2, Table A as well as in the assimilation list.*

- *UN 1120 BUTANOLS do not react with water under normal conditions of transport.*

*As a consequence aqueous solutions of UN 1120 tert-Butanol may be assigned to the standard liquid acetic acid.]*

#### 4.1.1.19.5 Rule for collective entries:

For the assimilation of filling substances for which "Rule for collective entries" is indicated in column 7, the following steps shall be taken and conditions be met (see also scheme in **Figure 4.1.1.19-2**):

- (a) Perform the assimilation procedure for each component of the solution, mixture or preparation in accordance with 4.1.1.19.3 taking into account the conditions in 4.1.1.19.2. In the case of generic entries, components may be neglected, that are known to have no damaging effect on ~~PE-HD~~[high density polyethylene](#) (e.g. solid pigments in UN 1263 PAINT or PAINT RELATED MATERIAL).
- (b) A solution, mixture or preparation cannot be assimilated to a standard liquid, if
  - the UN number and packing group of one or more of the dangerous components does not appear in the [assimilation](#) list or
  - "Rule for collective entries" is indicated [in column 7 of the assimilation list](#) for one or more of the components, or
  - (with exemption of UN 2059 NITROCELLULOSE SOLUTION; FLAMMABLE) the classification code of one or more of its dangerous components differs from that of the solution, mixture or preparation.
- (c) If all dangerous components are listed in the assimilation list, and its classification codes are in accordance with the classification code of the solution, mixture or preparation itself, and all dangerous components are assimilated to the same standard liquid or combination of standard liquids in column 7, the chemical compatibility of the solution, mixture or preparation may be regarded as ~~proven~~[verified](#) taking into account 4.1.1.19.1.
- (d) If all dangerous components are listed in the assimilation list and its classification codes are in accordance with the classification code of the solution, mixture or preparation itself, but different standard liquids are indicated in column 7, the chemical compatibility may only be regarded as ~~verified~~[proven](#) for the following combinations of standard liquids taking into account 4.1.1.19.1:

- water/nitric acid 55 %; with exemption of inorganic acids with the classification code C1, which are assigned to standard liquid water
- water/wetting solution;
- water/acetic acid;
- water/mixture of hydrocarbons
- water/n-butyl acetate – n-butyl acetate-saturated wetting solution.

*[Example 1: Mixture of UN 1940 THIOGLYCOLIC ACID (50%) and UN 2531 METHACRYLIC ACID; STABILIZED (50%); classification of the mixture: UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.*

- *Both the UN numbers of the components and the UN number of the mixture are included in the assimilation list.*
- *Both the components and the mixture have the same classification code: C3.*
- *UN 1940 THIOGLYCOLIC ACID is assimilated to standard liquid “acetic acid”, and UN 2531 METHACRYLIC ACID; STABILIZED is assimilated to standard liquid “n-butyl acetate/n-butyl acetate-sat. wetting solution”. According to paragraph d) this is **not** an acceptable combination of standard liquids. The chemical compatibility of the mixture has to be proved by another way.*

*Example 2: Mixture of UN 1793 ISOPROPYL ACID PHOSPHATE (50%) and UN 1803 PHENOLSULPHONIC ACID, LIQUID (50%); classification of the mixture: :UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.*

- *Both the UN numbers of the components and the UN number of the mixture are included in the assimilation list.*
- *Both the components and the mixture have the same classification code: C3.*
- *UN 1793 ISOPROPYL ACID PHOSPHATE is assimilated to standard liquid “wetting solution”, and UN 1803 PHENOLSULPHONIC ACID, LIQUID is assimilated to standard liquid “water”. According to paragraph d) this is one of the acceptable combinations of standard liquids. As a consequence the proof of the chemical compatibility may be regarded as given for this mixture, provided the packaging design type is approved for the standard liquids wetting solution and water.]*

(Rest of the text remains unchanged.)